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Yew Trees.

IN England the Yew-tree has long been a favorite with planters, and the oldest trees in Europe are believed to be Yews which were old enough to influence the selection of the sites of some of the oldest churches now standing in Great Britain, or were planted when they were built. Some of these trees are certainly four or five centuries old, and their enormous stems and broad picturesque heads of dark foliage are fitting emblems of the longevity of the British nation. In Europe the Yew-tree has furnished, from the time of the ancients, the best material for the bow, and long after the Anglo-Saxon Conquest Yew-tree bows were the principal weapons of the English. In the United States the Yew has never been much planted, and is comparatively little known here in gardens. In the New England and other northern states the European species is not hardy, and in the middle states, where it flourishes, there has been less general interest in planting and gardening, during this generation at least, than in New England. Many fine old Yew-trees, nevertheless, may be seen in the neighborhood of this city and in the suburbs of Philadelphia, Baltimore and Washington, and the fact that this tree has remained so rare in this part of the country can only be accounted for by the fact that its slow growth has deterred Americans, who want quick results, from using it more generally. But now that it is known that the Japanese Yew, Taxus cuspidata, is perfectly hardy in the northern states and that it grows more rapidly than the European tree, it is probable that the Yew will play a more important part in the decoration of American gardens than it has before. The Japanese Yew is an inhabitant of Manchuria, Corea and Yezo, where it is scattered through the forests of Oaks and other deciduous-leaved trees, and where it rises to the height of fifty feet, often forming a tall straight stem two feet in diameter. A favorite with the Japanese, it is often found in their gardens trimmed into grotesque and fantastic shapes. The Japanese Yew was introduced into the United States thirty years ago through the agency of the Parsons' Nursery, in Flushing, Long Island, but gardeners are only just beginning to learn its beauty and value.

Taxus, which is confined to the northern hemisphere, is widely distributed through North America, Europe, northern Africa and Asia, six species being recognized by botanists. The species, however, all resemble one another, except in habit and in some trivial leaf characters, and might as well be considered geographical forms as species, all six being practically identical in the structure of their flowers and fruit and in the character of their bark and wood. Three of these so-called species inhabit the United States; one is endemic in Mexico; one is widely scattered through Europe, northern Africa, and Asia, and the fourth is found only in eastern Asia. Of the species of our United States flora, one, Taxus Canadensis, which is a low shrub with wide-spreading, prostrate branches and a stout stem, is a common inhabitant of northern woods, forming dense carpets or low thickets in their shade from Newfoundland to the shores of Lake Winnipeg, and southward through the northern states to New Jersey and Minnesota. This plant is occasionally cultivated in northern gardens, where it might be used much more freely than it has been to cover moist ground shaded by trees. The other Yews of the United States are arborescent in habit, one being found growing in Florida and the other in the Pacific states. The Florida Yew, Taxus Floridana, which is one of the rarest of the North American trees, inhabits the bluffs and ravines of the eastern bank of the Apalachicola River, where it grows with the Florida Torreya in the territory extending southward from Aspalaga to Bristol, in Gasten County, for a distance of about thirty miles. Taxus Floridana is a bushy tree, rarely thirty feet high, with a short trunk occasionally a foot in diameter, and many stout, spreading branches. Although discovered as long ago as 1833, the fruit was seen for the first time last winter, and this handsome bushy tree appears to have remained unknown in gardens until the past winter, when living plants were introduced into Mr. Vanderbilt's arboretum on his estate at Biltmore, in North Carolina.

The second arborescent Yew in the United States, Taxus brevifolia, often attains a height of eighty feet, with a tall lobed trunk two or three feet in diameter. An inhabitant of the shady banks of mountain streams, damp ravines and deep gorges, growing usually under the shade of larger evergreens, it is distributed from Queen Charlotte's Islands and the valley of the Skena River in British Columbia southward on the Coast Mountains to the shores of the Bay of Monterey, in California; it also inhabits many of the interior ranges of British Columbia and the Cascade Mountains, ranging eastward over the mountains of eastern Washington and Oregon to the western slopes of the Rocky Mountains of Montana, and occurs on the western slopes of the Sierras of northern and central California, between elevations of five and eight thousand feet. The wood of this tree furnished the Indians of the north-west coast with the material from which they made their bows, the handles of their spears, their paddles and fish-hooks; and the white man finds it the most durable material for his fence-posts. Introduced into English gardens forty years ago, the western Yew is occasionally found in European collections. Unfortunately, this beautiful tree has not yet shown its capacity to withstand the severity of our eastern climate.

Of the fourth American species nothing is known beyond the fact that fifty years ago a German botanist collected specimens of a Yew-tree in southern Mexico, which was afterward described in Germany as Taxus globosa. Botanists who have traveled in Mexico in recent years have seen nothing of this plant, and there is nothing to say about it except to comment on the interest which would attach to its rediscovery.

The Yew-tree, however, in which the world has been interested since the time of the Greeks, is the Old World Taxus baccata. This is not only the best known of all the plants of the genus, but it surpasses them all in the richness and beauty of its dark lustrous foliage and in its size, individuals one hundred feet high, with trunks five or six, or even ten, feet in diameter being known. The Old World Yew, which usually grows in shady situations on the northern slopes of hills or under the cover of deciduous-leaved

trees, and is rarely gregarious, is spread all over western and central Europe, reaching southern Scandinavia on the north and ascending the mountains of southern Europe and northern Africa; in Asia it ranges from the Mediterranean to the temperate Himalayas, where it is common in the north-western provinces up to elevations of ten or twelve thousand feet above the sea, and where it appears to attain its largest size, and to northern China and Manchuria. The wood of this tree is strong, hard, flexible, elastic, easy to split and very durable. These qualities make it valuable to the manufacturer of bows, and no other wood which has ever been tried for this purpose equals that of the Yew. It is considered more valuable than that of any other European tree for cabinet-making, and for this purpose it is largely used for veneers. In India the Yew-tree is venerated and the wood is burnt as incense, its branches are carried in religious festivals, and the powdered bark is employed medicinally.

Stories of the poisonous properties of the Yew-tree have been rife for more than two thousand years, and in Europe numerous instances are cited of fatal results following the medicinal use of the leaves, and of the death of animals which had eaten them. There is no record, however, of any evil results from the browsing on Yew leaves in the United States; in India domestic animals are said to be regularly fed on Yew branches, and in Europe cases are reported of animals which have been gradually accustomed to a diet of Yew. The sweet, juicy red pulp which covers the stones is palatable to most people and is eaten without producing any ill effects; and flour made from the seeds has been successfully used in Europe to fatten poultry. It is hardly possible that the different species of this homomorphic genus can vary in toxic properties, or that the Old World Yew is more poisonous in Europe than it is in India, and the whole subject of the poisonous properties of the plants of this genus needs more careful investigation than it has received.

In the decoration of European gardens Taxus baccata has played an important part, especially during the seventeenth century, when, cut into all sorts of fantastic shapes, it was the pride of French, Dutch and English gardens. The Old World Yew is unsurpassed as a hedge plant, and is still one of the most generally planted evergreens in western and central Europe, where many abnormal forms are cultivated, the most distinct of these being the Fastigiate or Florence Court or Irish Yew, found many years ago on an Irish mountain, the Dovaston or Weeping Yew, and varieties with gold-colored or silvery leaves. The readers of this journal are doubtless familiar with the appearance of the cultivated European Yew, with its compact bushy juvenile habit and its more mature pyramidal head, but in our illustration on page 265 of this issue they can see the portrait of a wild Yew-tree, a venerable specimen growing on the upper slopes of an Algerian mountain. Our illustration is from a photograph made by Monsieur Maurice L. de Vilmorin, of Paris, who has obligingly placed it at our disposal.

Plant Names of Indian Origin.—II.

CATALPA.—This word was first used by Mark Catesby (*Nat. Hist. Carolina, Florida, etc.*, i., p. 49; 1745), who gives no explanation of its origin or meaning. Speaking of the Catalpa, he says: "This tree was unknown to the inhabitants of Carolina till I brought the seeds from the remoter parts of the country." By the "remoter parts of the country" is probably meant Georgia, where the tree is indigenous, and into which Catesby made excursions while living in Carolina, between 1722 and 1726. This was formerly a part of the domain of the Muskhogeans. Believing that the word was derived from one of the dialects of this family, I submitted it to Mrs. A. E. W. Robertson, of Muscogee, Indian Territory, who has a profound knowledge of the Muscogee language, and who tells me that it is undoubtedly from that dialect, and is a slight corruption of *kutúhlpa*, meaning "winged head"—the name, to use her words, referring to the "shape and marking of the flower, with its winged border." From a supposition that the name was derived from that of a tribe of South Carolina Indians, the word was corrupted at an early period to Cataba and Catawba. Patalpha, another corruption of the word, is applied in the Lower Wabash and White River Valleys, Indiana, to Catalpa speciosa.

Chapote (Diospyros Texana).—From Mexican-Spanish sapote, which is from Aztec *tzapotl*, a general name, in composition, in that language, for sweet, fleshy fruits. The name of the Mexican persimmon was *tlilitzapotl*, meaning "black fruit."

Chia (Salvia Columbariæ).—The Aztec name, according to Molina (*Vocab. Mexic.*), for the "oily seeds" of some plant.

Chicalote.—A popular name in southern California for Argemone hispida. It is from Aztec *chicalotl*, meaning "that which is spiny."

Chinkapin, or Chinquapin (Castanea pumila).—"Many goodly groves of *Chincomen*-trees, with a huske like unto a chesnut" (R. Hamor, in *A true discourse of the present estate of Virginia* [about 1614]). The last syllable, *men*, in the above word is an Algonkin inseparable suffix, meaning "seed," "nut," or fruit." The erroneous change to *pin*, a suffix meaning "root," was made at quite an early period, as early, at least, as 1682. Captain Smith (*Hist. of Virginia*, about 1606-8) and Strachey (*Travaile into Virginia*, about 1610) give the name in the reduplicated form, *chechinquamin* and *chichinquamin*. This renders the meaning of the first part of the word a little doubtful; but I think that, of the two possible interpretations, "rattle-nut" and "scratch fruit," the latter (which would refer to the stiff spiny character of the involucre) is the more probable. By the Pamlico Algonkins, further south, the fruit was called *sapúmmen* (Hariot, 1585), which may, perhaps, be regarded as the southern equivalent of *sabómin* and *jabómin*, "pierce-fruit," names in Cree and Odjibway, respectively, for the prickly fruit of Ribes Cynosbati.

Cinque (Triosteum perfoliatum).—A name of the plant given by Clayton (*Flora Virgin.*). Rafinesque (*Med. Flor.*, ii., 269) speaks of the plant as the "Sincky of the Indians." The name, except as a synonym in works on Materia Medica, is probably obsolete. If Indian, it is an Algonkin word, and either from *sinnegeu*, "it is stony," or an abbreviation of *sinnegemin*, "stony seed," referring to the bony character of the nutlets.

Clamoun.—A name in Massachusetts for Kalmia latifolia, thought to be of Indian origin. If so, it is a contraction of *kullamoun* for *kunnamoun*, "spoon material." The wood, which is soft when fresh, becomes hard and dense, and was used by the aborigines for making spoons.

Coakum (Phytolacca decandra).—This name, with its variants Cocum and Cunicum, is a word of Indian (Tarascan) origin, but not of Indian application. Rafinesque (*Med. Fl.*, ii., 25) says that the Phytolacca is the "Coakum of northern tribes," and this statement has been repeated. The "northern tribes" in this instance were the colonists of Massachusetts, who formed the word through a corruption of Mechoacan, an old pharmaceutical name for a purgative root derived from the Mexican province so called, and afterward extended to the roots of other plants that had similar medicinal properties. Mechoacan is a Tarascan word, meaning "fish-land."

Cocash (Aster puniceus).—From Natick (Algonk.) *kokoshki*, "it is very rough," a name referring to the hispid character of the stems, which has given the plant one of its popular names—that of the "rough-stemmed Aster." The name was applied also by the Indians (and is still applied) to Erigeron Philadelphicus, because of its rough, hairy stems.

Cohosh.—A name for several plants having similar medicinal properties—namely, Cimicifuga, Caulophyllum and Actæa. It is from *cohosoo*, meaning "it is spiny," or "bristly" or "rough to the touch," the Indian (North-

eastern Algonkin) designation, not of the plants, but of their medicinal rhizomes, which are of a more or less rough and jagged nature when dry.

COONTI.—A name usually appropriated to Zamia integrifolia, but a general term among the Seminoles for bread roots. There are several variants of the word, such as Coonta, Coontia and Koonitie. It is apparently from *kána* (*kán* in composition), "ground," and *ata*, "under."

CUSCATOMINY, with variants: Cruskatominy, Kiskitomas, Kiskitomis, Kisky Thomas, Kiskytom and Kitkytom.—A name in the vicinity of New York city (Long Island and Staten Island) for the nut of Hickoria ovata. Dr. J. H. Trumbull conjectures that the name alludes to the thinness of the shell of the nut of the Shagbark Hickory, and that it implies one that may be "cracked with the teeth." If this is so, it is a corruption of a word that may be compared with Abnaki (Algonk.) *oosekooskadámen* (contracted *skooskadámen*), "he crushes it with the teeth."

DAHOON (Ilex Cassine)—a word first used by Catesby (1722-6). It has been supposed to be Indian, but it cannot now be referred to any language formerly spoken in the southern states.

DOCKMACKIE (Viburnum acerifolium).—A word of Mohegan Algonk.) origin, meaning "it is cooling." "The oldest Dutch settlers in Columbia County, New York," says Eaton (*Manual of Botany*), "tell us that the Indians in that vicinity considered the external application of the leaves of the Dockmackie as a sovereign remedy in every kind of inflammatory tumor."

DOGACHAMUS, or DOGACKERME (Cornus circinata).—A corruption of Penobscot (Algonk.) *damaganatikwimosi*, "pipe-stem bush."

HACKMATACK (Larix Americana).—A corruption (an anagram, really) of tacamahac, an early name in Massachusetts for the same tree. The name has been transferred to several other conifers, such as Thuya occidentalis, Pinus contorta, P. Murrayana and Juniperus communis.

HICKOK (Chrysobalanus Icaco).—Through Carib-Span., from *ikákoo*, the name of the plum-like fruit in the female dialect of the Caribs of the Lesser Antilles. Cocoa, in the name Cócoa-plum (Corker-plum in Florida), is a variant of the word.

HICKORY.—This word, or rather the word of which it is an abbreviation, was the name neither of a tree nor its fruit, but of an emulsion prepared by the Virginia Algonkins from the moker-nut (Hickoria alba), and used as an ingredient in their cookery. Strachey (*Travaile into Virginia*, p. 129), speaking of the "walnuts" of the country, says, after mentioning the black walnut and the butternut: "The third sort is . . . exceeding hard-shelled and hath a passing sweet karnell; this last kind the Indians beat into pieces with stones, and putting them, shells and all, into morters, mingling water with them, with long woodden pestells pound them so long togither untill they make a kind of mylke, or oylie liquor, which they call *powcohicora*." This word (properly, *pakohikoré*) means, literally, "it is brayed." As a name for the emulsion so called, it corresponds to the English expression "brayed-stuff," or "that which is made by braying." The word is from the root *pak*, "to strike," or "beat"; whence also the name Pecan, *q. v.* The changes which this word has undergone up to the present, starting with it as the name of a food preparation simply, are, chronologically, as follows: pokahiquara, pokahichory, pokerchicory, pokikerrie, pockery, pohichery, peckikery, pieck-hickery, hickery, hiquery, hickory, hiccory, hickorie and hiccora. The orthography now adopted was first used in 1682, in *An Account of the Province of Carolina* (reprinted in Force's Tracts).

The word hickory as a name, in what were formerly Spanish possessions, for a chocolate cup, is from Mex.-Span., jicara (formerly xicara), a chocolate cup, from *xicalli*, the Aztec name (1) for a small variety of gourd, and (2) for a roundish cup or bowl used for drinking purposes. Hickory, a name for several small species of Mamillaria, belongs to the language of the Tarahumari Indians, who inhabit the Sierra Madre, near the frontiers of Mexico.

New York. *W. R. Gerard.*

Mycology in the Southern States.

CONSIDERING the later development of botanical study in this country, it is not a little singular that the two earliest students of American fungi commenced their labors in a single state, and that that state was North Carolina. Schweinitz and Curtiss described their species largely from the south. Their species, like many others of that day, were very briefly described, and a very large number of them have never been seen since their original discovery; this arises from two conditions: (1) The inherent difficulty of identifying the plants from the descriptions, and even from the types, some of which are lost, and (2) the fact that very little field work has been done in the southern tier of states since their time.

If we should draw a line across the country along the northern boundary of North Carolina the area south of that line, made up of thirteen entire states and about two-fifths of California, will represent about one-third of the United States, exclusive of Alaska. Let us examine briefly into the field work in mycology that has been accomplished in this portion of our territory. Leaving North Carolina where the two pioneers labored, and South Carolina, which was later explored to a considerable extent by Ravenel, we come to Florida, which has been lightly skimmed by a few transient collectors, Dr. Martin, Calkins, Nash, the writer, and the two enthusiastic workers at the subtropical laboratory, but not a tithe of its riches has been brought to light and the region of its really tropical flora is even yet untouched. From Alabama the late Judge Peters and Beaumont both contributed somewhat to the Berkeley and Curtiss series, and later Professor Atkinson made considerable collections in the central eastern portion of the state during the short time he was connected with the Alabama Polytechnic Institute.

In Mississippi, Professors Tracy and Earle, in the moments stolen from professional work, have brought out a preliminary list of Mississippi fungi containing over 350 species, of which one-sixth were undescribed, and they have already a large supplementary list ready for publication. In Louisiana, Hale collected a few species in the early days, and more recently Father Langlois has done a highly creditable work in the collections he has made largely in a single parish. From the vast state of Texas what have we to represent its rich flora? (1) A list of 149 species by M. C. Cooke, collected by Lindheimer, Wright and Ravenel. (2) A partial bulletin from the experiment station devoted to parasitic fungi, and including a list of 95 species, many of which are included in the preceding. (3) A brief review of the fungous flora of the state by Ravenel, which incidentally mentions a few species. All and only this from a state that probably supports a larger fungous flora than any single state of the Union. In 1891 the writer spent a few hours in the city of Austin, and with a half hour to spare strolled out to one of the arroyos within the city limits. On this stroll, which was taken in a dry, unfavorable season, six species of fungi were gathered. Three were new to science, and three represented rare and highly interesting genera, two of which are unique and scarcely represented in any of the larger herbaria. The incident is unimportant in itself, except as it shows what quantities of material are in store for those who commence the exploration of this almost unknown territory.

Until the last three years southern California has been a terra incognita in mycology, but during that time Professor McClatchie has made a highly creditable commencement in the region about his institute.

From the remaining states in this southern tier, Georgia, Arkansas, Oklahoma, New Mexico and Arizona, no systematic field work has ever been done, and probably two hundred species would cover our knowledge of their aggre-

gate mycologic flora, the larger portion being collected by Professor Tracy on a single trip across the territories. Surely there is room for abundant field work throughout this entire third of our area. The exact knowledge of the higher plants is slender enough; any one who has spent even a little time in the area covered by Chapman's Flora is painfully aware of that, but in the field of cryptogamic botany the work has been much less thorough.

And to whom must we look for the exploration of this vast unknown? Naturally to the experiment stations scattered throughout this area, for they represent the leaders in scientific matters throughout this belt as in no other portion of the country. The other colleges, including some that are recognized as state institutions, are mostly strictly literary in their tendencies, and in many of them departments of science, particularly the newer biologic sciences, receive a little encouragement. Throughout this entire area there is scarcely a professor of botany outside of the experiment stations, and the private workers who are sufficiently interested in exploration to be of service can easily be counted on the fingers of a single hand.

There is need of just this sort of exploration, and there is need of it now, before more serious modifications of the original flora occur than civilization has already brought. Considerable is being done at some of the stations, but at others less, and at some nothing. A few have not even a botanist, much less a mycologist, on their staff. The work of investigation of plant diseases is proper, and must be carried on; the studies of ecology and physiology and pathology are opening up new fields of exploration, and must needs be attended to, but with all these varied interests there is great need that the cryptogamic flora of the southern third of the United States be brought to light.

While I make this plea for work in mycology, I do not forget that our knowledge of the Algæ of this region is vastly less than that of any other group, and even the Spermaphytes, too often studied from imperfect dried material, instead of in their native haunts, will follow closely on.

Auburn, Ala. *Lucien M. Underwood.*

Foreign Correspondence

London Letter.

WE in London are now in the height of the gardening season, and every one in the horticultural world seems to be working at high pressure. This is most evident at the periodical gatherings at the Royal Horticultural Society's headquarters. I thought on Tuesday last that I had rarely seen a more bewildering assemblage of novelties among all classes of plants than was shown there, and seldom has the hall been so full of plants, flowers and people. It was an eloquent sign of the healthy and active state of horticulture in this country at this time.

I cannot comment upon all the new and remarkable exhibits that interested me, but will pick out a few that the fraternity on your side might like to know about. Beginning with the Orchids, which, by unwritten etiquette, are presumed to hold the right of first mention, there was such an extraordinary display of these that not even at the Great Temple show was there such a gathering of the choicest and rarest kinds. I need only mention that the exhibitors included Baron Schrœder, Sir Trevor Lawrence, Hon. Walter Rothschild, Sir F. Wigan, Messrs. Crawsboy, Ingram, Cobb and Gaskell among amateurs, and Messrs. Veitch, Sander, Low and Williams among nurserymen, and from this list orchidists may know that the choicest Orchid collections were represented. There were, however, comparatively few that obtained certificates or awards of merit. The only first-class certificate was given to a splendid form of Miltonia (Odontoglossum) vexillaria, called Memoria G. D. Owen, which has the large flowers of the finest forms with the color of the smaller autumn or late-flowering variety, and so peculiar were the markings that it brought out the general remark that it more resembled the expanded wings of a gorgeous butterfly than any Orchid known. It is certainly the most lovely variety yet seen in this country. Among the many new Cattleyas and Lælias, one from Mr. Ingram, named Lælio-Cattleya Pytho, a cross between L. elegans Turneri and Cattleya Loddigesi, was thoroughly deserving of its award of merit. The flowers indicate intermediate characters, the sepals and petals being deep rose-pink, with the broad lip of a deep hue passing to white. Another Lælio-Cattleya is a variety of Mardelli from Messrs. Sander. It differs from the type by the lip being deeper and richer in color, and with a conspicuous lemon-yellow blotch in the throat. It is a cross between L. elegans and C. Luddemanniana, and, no doubt, is a seedling variation. A splendid variety of Odontoglossum crispum, named Lord Sherborne, won an award on account of its distinct color, which is white, flushed with rose, and heavily blotched with reddish brown. These were all that the committee distinguished by awards, but among the collections there were some Orchids in superb condition, the names of some of which will be sufficient for specialists who might like to know whose they are. Baron Schrœder had the gorgeous Lælia-Cattleya eximia, with four flowers, perhaps the largest of all Cattleyas, and extremely rich in color; L.-Cattleya Canhauriana; Cypripedium platytænium, still among the rarest of Orchids; Sobralia xantholeuca; S. macrantha Kienastiana, with gigantic flowers, and fine examples of the rarely seen, but old, Lælia majalis. Sir Trevor Lawrence's collection was chiefly of rare botanical Orchids, as they are called—that is, they are not showy. Mr. Rothschild had in his lot a new Catasetum, named splendens leucanthum, a natural hybrid, recalling in size and and form C. Bonigerothi, the flowers of ivory-white, of thick texture and adorned with emerald-green blotches at the base of the petals. Messrs. Veitch had several of their finest hybrids, and among them the new Disa Langleyensis and D. Kewensis, raised at Kew, both first-rate and decidedly coming Orchids. One of the finest things in Messrs. Sanders' group was Sobralia Amesiana, with beautifully formed flowers of a delicate white, suffused with rose-pink. There were many varieties of Cattleya Mossiæ, as this is just the season for them; although there are countless varieties, those shown named Mrs. Egerton Grey and E. Ashworth, both from amateurs, are worth noting.

Among the collections of other plants the Cannas were remarkable, being the finest I had ever seen, especially those from Messrs. Cannell, of Swanley. There were many novelties, but the committee are evidently very careful in giving certificates and awards. Among all the lot but two received awards of merit. One of these, from Messrs. Veitch, was called Austria, a variety with one of the largest flowers I have seen, and of a rich warm yellow, with only faint freckles of red, the best yellow yet seen here. The other award was to Messrs. Paul for one called George Paul, very large and of good shape, with rich orange-scarlet spike, massive, the foliage bronzy red. Some of Messrs. Cannell's new sorts I thought were exceptionally good, especially those named Paul Meylan, deep orange-red; Golden Queen, a fine yellow; Pierson, intense crimson; M. H. Debrouse, yellow, spotted with scarlet; Avilan, a finely formed flower, yellow, spotted with crimson, and Senateur Montefiore, orange-scarlet, blotched with red. Veitch's collection included such fine varieties as Alphonse Bouvier, Comte de Bouchard, L. E. Bailey and Progression. The best in Messrs. Pauls' lot were Czar Alexander III. and J. G. Baker, both first-rate. The collection included new Cannas from a large number of cultivators, but there was no great advance shown over the exhibits of previous seasons. It seems as if growers of new Cannas need some new raw material to work upon so as to obtain a new break in color.

Roses were plentiful and in perfection. Among a few new varieties, one of the most remarkable was a white form of Rosa rugosa with fringed petals, named fimbriata. It is decidedly distinct and pretty. It is in flower at Kew,

where it is pure white and strongly perfumed, but at the show the flowers were blush white. Another variety that won an award was R. rugosa Rose Apples, which is semi-double and pale pink, very floriferous and quite distinct as a garden Rose. Messrs. Paul had also a new single Rose in the way of Carmine Pillar. It is of an intensely brilliant scarlet, large and abundant, and will make a showy Rose for the garden. It is named Royal Scarlet. The hybrid Briers raised by Lord Penzance were shown beautifully by Cooling, of Bath. There are many varieties now, but several are too much alike. The four which I consider represent all the characters in these hybrids are all beautiful.

awards of merit to them, notwithstanding that there is now such a multitude of first-rate sorts. All the sorts were what are here called border kinds, in distinction to the tree kinds which flower in winter and are grown under glass. The best yellow I have seen was Admiration, shown from Blenheim by the Duke of Marlborough. It has flowers as large as a Malmaison, very full and of a clear yellow like Penshurst. Mr. Martin Smith, now the most prominent amateur Carnation fancier, obtained awards for Nabob, of a rich terra cotta like Reynolds Hole, but a larger and bolder flower, and Her Grace, with large flowers of a delicate pink that do not burst the calyx.

Fig. 37.—An Algerian Yew-tree (Taxus baccata).—See page 261.

These are Amy Robsart, Rose Bardwardine, Anne of Gierstein and Lady Penzance. They range in color from an orange-red to a rich crimson-rose and are all extremely floriferous and with strong perfume. Some masses of them now in full beauty at Kew on the lawns are the attraction of crowds of visitors, and that fact is a good criterion of the value of a garden plant.

Carnations were shown in large numbers, and rarely has there been at one show such a gathering of new sorts. Half a dozen were considered so good and distinct by the committee that they could not do otherwise than give

The well-known raiser Mr. Turner, of Slough, had a large and fine collection and won awards with Delos, brilliant scarlet with a rich Clove scent; Virgo, a yellow ground flaked and margined with scarlet, and Ness, best described as a scarlet Clove. Several others could have been picked out of this collection as good as those certificated, such as Loveliness, pale pink; Corunna, yellow ground; Lady Biddulph, a fine Malmaison type, and Little John, vivid scarlet. These are all worth including in the choicest selections.

The Delphiniums, from Mr. Kelway, of Longport, now

the most noted raiser of these valuable border flowers, had an extensive display of superb varieties, the majority seedlings. But it is difficult to describe them as they differed only by subtle shades of purples and lilacs. One I singled out as very remarkable, and, in fact, is the only variety I have yet seen with ivory-white flowers, and is a decided break from the prevailing tints. It may lead up to some remarkable seedlings with variegated flowers.

The Chrysanthemum-flowered Pæonies from Messrs. Wallace, of Colchester, attracted much attention, as they are distinctly different from the full double sorts. Mr. Wallace told me he imported them direct from Japan, where they have evidently made a point in selecting this peculiar type of flower. The flowers are large, with broad shell-like outer petals, while the inner petals are narrow and incurved like a chrysanthemum, or rather like an anemone. One can see a future for this type of Pæony, though perhaps they will never rival the glorious French varieties with huge globular double heads.

The most remarkable cultural exhibit in the show was a collection of Streptocarpus grown to perfection by one of the best vegetable gardeners in the country. The plants represented all the finest of the Kew and Chelsea hybrids, and every plant carried quite a sheaf of several scores of blossoms. They were quite a revelation to most people, and especially to the men who raised the hybrids, as they never thought that such perfection could be attained in such plants. The collection was the greatest advertisement Messrs. Veitch could have for their hybrids, and, no doubt, it will give an impetus to Streptocarpus culture. Of the miscellaneous exhibits may be mentioned the pretty Californian Brodiæa Howelli lilacina, which was considered worthy of a first-class certificate. It is much richer in color than the type, and the same exhibitors, Messrs. Wallace, also showed B. ixioides erecta, distinct from the type in its larger flowers and more erect umbels. They also had a number of lovely Californian bulbous plants, Calochorti and the like, besides Japanese Lilies, of which the new form of L. Japonicum, called Alexandra, was remarkable. It may be best described as a pure white Lilium Krameri. Messrs. Veitch showed some choice Japanese shrubs in flower, including Cornus Kousa, Styrax Japonica, Indigofera decora alba, and Cæsalpinia Japonica, all of which have proved hardy in their nursery in Surrey, though all regarded as doubtful plants generally in this country.

Kew. *William Goldring.*

Cultural Department.

Filmy Ferns in the Dwelling-house.

IT may seem strange to some to be told that Filmy Ferns are good house plants, as their fronds are of the thinnest possible texture and they require to be continually kept in a very humid atmosphere, but they can be grown successfully by keeping them all the time in a glass case. An inexpensive case can easily be constructed with three large panes of glass for the top and for the two sides, and two smaller ones for the ends. The size of the panes can be determined by convenience and the kinds of Ferns it is intended to grow. The bottom of the case should consist of a stout piece of wood, and on top of this a zinc pan to prevent water getting through, and also to provide a constant supply of moisture. The glass can be kept in position with four pieces of oak-wood with the bark on and a quarter section grooved out the entire length. The pieces can be nailed to the wooden frame, and at the top fastened with wire or pieces of wood running all the way round, finished off so that the glass top will lie perfectly flat. The kind of soil in which I find Filmy Ferns to succeed best consists of rough peat or fern-roots, pieces of broken pots, bricks or sandstone in equal proportions. Some rough sand should be added, and lumps of charcoal the size of small Hickory nuts, all mixed together thoroughly. Some rough gravel should first be put into the zinc pan and this covered with some that is a little finer. Instead of planting the Ferns out in the case I prefer to keep them in pots or small seed pans, and success depends greatly on the manner in which they are potted. One-third of the pot should be filled with small pieces of broken pots for drainage, and the remainder filled with a sufficient quantity of the soil to keep the plant when finished off well above the rim. The soil should be firmly pressed about the roots and pieces of charcoal or standstone be used to keep it firmly in place. When placed in the case the spaces around the pots should be filled in with different kinds of rocks. The tallest plants should be in the centre, or if the plants are all about the same size some should be stood on pieces of flat stones. The rocks will soon become moss-grown and present a beautiful appearance. After the Ferns are potted and arranged the first watering should be done with a fine sprinkler so as to settle the soil; after that they must be watered through the spout of a small watering-pot, as the fronds should not be watered overhead. If water is kept in the zinc pan all the time it will be found that the plants will require but very little water. A window facing north is the best position for them, and if put in a more sunny place they must be shaded. In fact, the sun should never be allowed to shine on them as it dries up the moisture which condenses on the fronds much too rapidly.

In the selection of kinds to be cultivated there are a great many to choose from. The greater number are only of botanical interest, but there are several ornamental-leaved species suitable for this purpose. One of the best is Trichomanes reniforme, a native of New Zealand, with almost transparent, kidney-shaped leaves. The variety of the Killarney Fern, T. radicans, which grows wild in some parts of Alabama and adjoining states and is named Alabamensis, is well adapted for this work, as it is dwarf and grows very easily. T. trichoideum is well worth trying; the divisions of the fronds are almost hair-like, presenting a beautiful appearance when well grown. Small plants of Todea superba have a very ornamental appearance; they can be kept for some time in a small state if given only limited root room; otherwise they soon become too large for a glass case. Among the Hymenophyllums, H. demissum, H. hirtellum and H. pulcherrimum all thrive under ordinary conditions.

Botanic Garden, Washington, D. C. *G. W. Oliver.*

Notes on Hardy Perennials.

DICTAMNUS ALBUS, oftener found in gardens under the name D. Fraxinella, is an extremely effective plant when well grown. We find the form with rosy or purplish flowers more robust, and it makes much larger and more effective plants here than that with white flowers. This perennial plant has been cultivated in gardens for a great many years, and few perennials have a better and more effective habit. It has stout stems standing erect without staking, and attains a height of two feet and sometimes more with good cultivation. It has very distinct shining pinnate leaves. The flowers are produced in erect terminal racemes, and they last for two or three weeks in good condition. It does best here in a deep, partially moist soil and in a position where it is shaded from the sun during the hottest part of the day. We find that it thrives best if not disturbed too often.

Along the back row of the herbaceous border large plants of Clematis recta are in full bloom and are imposing at this time. This hardy perennial Clematis is an ideal plant for such a position, but requires careful tying to a strong stake about four feet in length. If this is neglected the showy white corymbs are not seen to advantage at flowering time. There are several forms of this plant, some of them blossoming a week or sometimes nearly two weeks before the others open their flowers. The typical plant is from four to five feet high and well clothed with pinnate leaves, the leaflets stalked, ovate, acuminate and entire. The flowers in many of the forms are produced in dense corymbs, although some have loose corymbs and are less valuable as decorative plants. One distinct variety now in flower makes a neat border plant attaining a height of from two to three feet, and it has loose corymbs of white flowers. This plant is known as C. recta lathryfolia. C. integrifolia is a neat distinct border plant with stems two feet high and stands erect without any support. The leaves are entire, rather scattered on the stems, ovate-lanceolate and smooth. The nodding blue flowers are produced singly on rather long peduncles at the ends of the stems. Although it is not as showy as some plants belonging to this genus, it has its own place and works in nicely in the third row from the front in the border.

A plant that attracts a good deal of attention in the border is Gypsophila Gmelinii. This Siberian plant has an elegant habit; it is about eighteen inches high and spreads out a yard or more in diameter. The loose, spreading stems are produced from a half-woody root and form a round, compact

plant. The innumerable white flowers are produced in loose airy panicles. G. paniculata is a handsome plant, but this Gypsophila has a better habit and has larger and more showy flowers. Its long roots penetrate deep, and it needs a deep light soil and an open sunny position in the border, or an exposed position in the rock garden. G. Stevenii is another plant with a light and graceful habit. It is about a foot and a half high and has panicles of small white flowers at this time.

Phlox ovata of Linnæus and P. Carolina are now both classed under the name P. ovata. They are excellent garden plants and distinct enough, especially for garden purposes, to retain their specific names. P. ovata is a neat showy plant with erect stems not much more than a foot high, and terminated with crowded, showy, reddish purple flowers. Its radical leaves are ovate, acute, rather fleshy, and the cauline ones are ovate-oblong. This plant blossoms here from two to three weeks earlier than the plant we used to know as P. Carolina. The Phlox formerly known as P. Carolina is just beginning to open its flowers. It is quite a distinct plant, growing several inches taller than P. ovata, and has longer and more tapering leaves and light purple flowers. Both kinds are easily grown in a light rich soil and a sunny position, where they increase rapidly. A collection of hardy plants is not complete without both forms of this plant.

Lindelofia spectabilis is a neat compact Boraginaceous plant. It is about eighteen inches high and has oblong-acuminate leaves, and at this time rather showy racemes of sky-blue flowers. It grows in a sunny position and in light sandy soil. It is easily raised from seed and blossoms the second year.

A plant that makes a good companion for Clematis recta in the back row in the border and that blossoms at the same time is Phlomis tuberosa. This noble labiate plant is very showy when properly grown and well placed. It is tall-growing, with stout, leafy, erect stems, which attain a height of five feet, and it needs no stake. The purple-rose flowers are borne plentifully in dense whorls along the upper part of the stems. It is quite hardy and produces an abundance of seeds annually, from which plants are easily raised.

Linum flavum makes a neat border-plant and grows well in the rock garden, where it makes a yellow mass of color at this time. It has slightly woody stems at the base, which are about one foot long and are nicely clothed with narrow lanceolate-acute sessile leaves. The showy yellow flowers are in corymbs and are most bright on sunny days. Near the front of the border it makes a welcome color at this time.

In a slightly raised and sunny position in the rock garden a large bed of the double form of Lychnis viscaria, with bright red flowers, is now conspicuous. This plant is useful and attractive also near the front of the border, where its bright flowers can be seen from a distance. The erect stems of the well-known L. Chalcedonica are now crowned with dense clusters of scarlet flowers, which are prominent among other flowers. There are several good varieties of this plant, one with white flowers; but the form with double scarlet flowers makes a handsome perennial.

Thermopsis Caroliniana has blossomed well in the border this season. It is effective placed at intervals in the back row of the border. Its habit is good, and if not crowded too much by other plants it will make strong stout stems that need no staking. The stems grow four feet high and are terminated by dense erect racemes of showy yellow flowers a foot in length. A deep and partially moist soil suits it well, and it makes stronger stems if it is not shaded by trees.

Botanic Garden, Harvard University. *Robert Cameron.*

Rhododendrons at Wellesley.

IT is only during recent years that the Rhododendron has taken its proper rank in the garden. As an evergreen flowering shrub it has few equals. For planting along avenues, for belting trees, for massing or for forming a single specimen on the lawn it is especially appropriate. Its bold rounded corymbs of broadly campanulate or rotate flowers, surrounded by an involucre-like whorl of handsome leaves, are borne in the greatest profusion wherever the plants succeed. During the last few years the number of available varieties and range of coloring has been constantly extended.

In the cultivation of Rhododendrons the location and the composition of the soil are matters of considerable importance. It is a mistake to suppose a sheltered southern aspect is absolutely necessary, and the reverse is nearer the truth, as even a slight experience will show. Many years ago Mr. H. H. Hunnewell enclosed a portion of his garden, planting dense hedges of Spruce-trees as a shelter from northerly winds and to protect the choice tender varieties, especially those brightly colored kinds in which there is a considerable infusion of the Himalayan R. arboreum. After many failures, he at last found that such varieties as he expected to grow there did better in more exposed places, screened to some extent by belts of trees or taller varieties of hardier Rhododendrons.

The composition of the soil is also important. A cool, moist subsoil should be secured wherever this is possible. A good peaty, though porous, loam, with a fair admixture of leaf-soil, may be recommended as best, and this should, at least, be four feet deep; would be even better deeper. This, however, must be largely a matter of experience. Rhododendrons may, and often do, succeed well in good common loam and leaf-soil, providing they are well watered and mulched during the summer. For mulching, a good coating of well-decayed cow-manure will answer well. A heavy clayey loam, in which the natural drainage is poor, appears to be the worst of all soils for these plants. Moisture at the roots is absolutely essential during summer, and in dry spells of weather it must be artificially applied. Any evidence of suffering may not be seen at once. The roots penetrate far below the frost-line, and if when winter comes they lack the proper supply of moisture, the damage resulting will be seen before spring in injured foliage and dead flower-buds which have failed to properly ripen in the autumn. It is only by close study that these facts are discovered. An ordinary observer would be sure to assign the cause to the severity of the winter. By carefully examining the weather records in regard to this matter, Mr. Hunnewell has always found that Rhododendrons suffer most after a very dry summer and autumn. On the approach of winter a covering of Oak-leaves about a foot in depth will afford protection to the roots, equalizing the thermal conditions of the soil throughout the winter; and these leaves when decayed fertilize the soil. If there is objection to the unsightly appearance of the leaves during summer, a covering of pine-needles will smooth over the surface. Lacking these, sweepings of short grass from the lawn will answer the same purpose.

It is upward of forty years since Mr. Hunnewell began a collection of Rhododendrons. At that time only seedlings were imported, and it was not thought possible to grow any of the choicer named varieties in this country, especially in the New England states. Some of these seedlings to-day are noble plants, upward of fifteen feet in height and as much in diameter. R. Everestianum was one of the first really good varieties to prove thoroughly hardy. With good cultivation the plants increased in size and beauty, and there was a desire for more variety of coloring, especially an admixture of scarlet shades. These could not be obtained without some degree of infusion with the R. arboreum type. In his endeavor to acclimatize the beautiful large flowers, common in Europe, Mr. Hunnewell had the coöperation of the noted English specialist, Mr. Anthony Waterer, who has made a particular study of raising varieties for the New England climate. R. Ponticum, which is tender here, but hardy in Europe, had hitherto been used as a stock for these hybrids, in most cases entering into their parentage also, and this is why so many plants imported years ago did not stand well. Mr. A. Waterer substituted our native R. Catawbiense from the hill regions of the south, as that is hardy in New England. It does not appear that our northern R. maximum has been used to any extent, though, no doubt, it is just as well suited for this purpose. It is a late bloomer. With only partial success at first, and with failures enough to discourage all but the most persevering, the work of acclimatization has been continued until now a score or more of the choicest and best Rhododendrons once thought tender here have proved themselves hardy. All hybrids in which the Himalayan type is well marked may be set down as unreliably hardy. The narrow, sharply tapering foliage is a sure indication that the weight of parentage lies with the more tender kind. There are many fine plants of this class, healthy in every way, which are uncertain bloomers, and only a few trusses open, often with but few flowers. But it does not count much with a true lover of these grand plants if a few do not bloom every year. Many kinds bloom too much, and it is surprising that they can continue to do so.

Recent experience has again shown that the loss of flower-buds may not be altogether due to extreme cold, for on plants of some tender varieties, lifted and stored in well-protected cellars, the buds remained apparently intact, but the flowers within the sheaths were killed. Perhaps the buds were not thoroughly ripened, or even advanced too much, flushed by autumn rains and bright days. I merely suggest this question for consideration, as it is only on the leading and most vigor-

ous shoots that the buds are injured, and always quite as much so on the healthiest plants. Occasionally, when all the upper buds are flowerless the weaker side branches will bear fully developed flowers.

The successful acclimatization of so many doubtful varieties, embracing new, rich and distinct colors, has been surprising. But it has not been done without attention to the minutest details and a regular system of records. The frequent removal of a variety from one place or position of exposure to another has been necessary to ensure a thorough test, and this has been done when less interested cultivators would have consigned the variety under test to the rubbish heap. Often it has been a question of kill or cure, and then the most unsightly plants have been removed to a swamp as a last recourse. This swamp is a low piece of ground, near the water-level, altogether composed of peaty soil, and is occasionally flooded. Nevertheless, it has become a recruiting ground, and from the road there is quite a show of bloom. This is remarkable when it is remembered that all the plants, when removed here, were considered almost beyond recovery. In this connection it is worthy of note that our locally native species, R. maximum, grows naturally in swampy places, and when planting on higher ground, good deep soil and plenty of water must be provided for it. The remarkable success achieved here has been due almost entirely to close attention to these details.

Distinctly spotted varieties of lighter shades are still lacking. A recent importation for trial includes some of this character, which it is hoped will prove hardy. Some of these have the broader, rounder leaf, the almost certain criterion of hardiness, while others have narrower leaves, and can almost at once be set down as doubtfully hardy.

Hybrids in which the blood of our native Rhododendron Catawbiense prevails are the hardiest in constitution, and from these some of the hardiest and best rose and scarlet shades are derived. The following varieties have been thoroughly tested, and have proved entirely hardy: Album grandiflorum is an old variety, and there are many large plants here; in point of beauty its magnificent trusses of pink flowers, changing to white, are scarcely exceeded by any of the newer kinds. Lady Grey Egerton, silvery blush, with grayish brown spots, is strikingly effective. Charles Bagley is cherry-red, with a fine truss and foliage. Caractacus is deep crimson, and everywhere recommended. Lady Crossly, salmon-pink, with broadly campanulate flowers, is represented by some fine plants. Lady Armstrong, seen in many places, was once thought tender, but is now regarded one of the best hardy varieties, handsome in foliage as well as truss; the flowers are rosy red and much spotted. Charles Dickens seems to me the most striking of all the red Rhododendrons. Sefton is another grand variety which has only within the last few years proved hardy; it is deep maroon, with a large truss, large flowers and handsome foliage. Kettledrum is hardy and distinct, rose-colored. Other proved sorts are Old Port, plum color; Alexander Dancer, beautiful warm red, and one of the earliest and best; John Waterer, free, dark crimson; Maximum Wellesianum, blush, changing to white; Delicatessimum, also blush, changing to white, and late, the handsomest of all for individual specimens—it is fully a week later, blooming with the Mountain Laurel, Kalmia latifolia, and it is largely associated with them for effect; Mrs. Milner, rich crimson.

Some varieties not yet in the market are here for trial. They are in all respects the best in their line of color yet sent out. H. S. Hunnewell is white, with brown spots, compact and free. F. L. Ames is of the best type, and one which must become the ideal; the individual flowers are very large, round and smooth, with a white centre and pink edge; it is free from the fringe characteristic of many of the older varieties. Charles S. Sargent is a red rose-flowered kind, with a compact truss and good habit. Mrs. C. S. Sargent is said to be the pink Everestianum; it resembles the older variety in some respects, but the flowers are larger.

Under canvas there is an exhibition at Wellesley of distinctly tender varieties, all of which are removed to cellars in winter. These additional three hundred or more varieties embrace the most beautiful colors known among these plants, but it is hardly probable they will come into general cultivation, on account of the special conditions required. Princess Mary of Cambridge is a beautiful blush with a deeper edge; out-of-doors this variety has stood the winter well, and, though some buds were killed, it still shows a few perfect flowers. Kate Alice Waterer has fine trusses of erect flowers, rosy edged, with a white centre, upper petals blotched with brown. Other tender varieties are Mirandum, red-rose, beautiful truss; Mrs. Shuttleworth, scarlet, light centre, much spotted—a distinctly beautiful variety; Mrs. Simpson, white, beautifully spotted; John Walter, rich crimson; Ralph Saunders, deep crimson, finely marked; Mrs. John Clutton, almost pure white. This partial list can give only an inadequate idea of this rich collection, and all who can make it convenient should visit Wellesley during the flowering season, when Mr. Hunnewell opens his grounds to the public.

Wellesley, Mass. *T. D. Hatfield.*

Correspondence.

Native Plants at Niagara Falls.

To the Editor of Garden and Forest:

Sir,—Nature never fails to give us her overtones when she plays her great symphonies, any more than do the great composers. We cannot fail to catch the softening and mellowing thus lent to the musical strain, for hearing is involuntary, but we must so often be taught to see what is right before us, and our teachers are so few, that we not infrequently miss all but the most dazzling part of the outdoor picture. The devotee of field science is never more aware of this than on visiting Niagara Falls. Standing a fortnight ago on Prospect Point, perhaps the most striking scenic spot in the world, I leaned over the edge of the sheer and partly overhanging wall and looked down, not at the great sheet of water, but at the rocks that continue the gorge northward.

There is often scarcely a handful of soil to the square foot, and sometimes apparently none at all on the face of the great precipice, yet it is clothed with wild plants almost from top to bottom. So hidden are they by the perpendicular wall and the artificial coping above it that many of them are hard to make out, but new discoveries are made at every change of position. The Columbine, Aquilegia Canadensis, loves the spot so well that its bright red blossoms appear sometimes after they have disappeared from gardens. The plant is the most venturesome and hardy of any there, and appears in a rock crevice where nothing else but the bare wall is seen. It is difficult to understand how it subsists or even clings to the wall, but it is content and holds out no hands for sustenance except to the humid air. One or two wild Roses are there, and the Wild Gooseberry sends up sturdy stems near the top of the wall. A Spiræa, probably tomentosa, is at home, and Goldenrods, Rhus toxicodendron and probably Rhus radicans, as it is everywhere about the Falls, and Ampelopsis quinquefolia. Creepers are rampant, hardly less so than in the woods on Goat Island, where the wild Grape attains great size and runs freely over the tops of quite tall trees. The wild Grape on the edge of the gorge was just setting its crop and showed a luxuriance of bunches that would charm a vineyardist. Bittersweet and Solanum Dulcamara are also there. These vines do not venture far down the wall, as they need soil, but they are in the spirit of the place and are seen rising from its base and sometimes making their way far up the moist surface, while the Aquilegia and some smaller greenery, that it is hard to make out in the distance, crop out of every seam and ridge and terrace from base to summit.

It is this acceptance of the wild spirit of Niagara that makes its flora so acceptable. The soil is naturally thin and sterile, so that the effort to turn the river bank on the mainland into a cultivated park is so far indifferently successful, and the ambitious evergreens that were planted on Bath Island are all gone. But this makes no difference with the wild plants; they flourish everywhere and are as indifferent to the soil as any but actual air-plants can be.

The wildest of our native plants do not yield naturally to cultivation, because they demand atmospheric conditions that cannot be transplanted with them. The result is that they linger awhile out of their native element and then disappear. Let Niagara pretty generally alone and it will never want for flora that is appropriate to it. There is very doubtful need of the forest-tree nursery that is made to disfigure a part of Goat Island, or the thicket of Snowberry, Symphoricarpus racemosus, that begins to shut in the drive from Bath Island.

Buffalo, N. Y. *John Chamberlin.*

Notes from West Virginia.

To the Editor of Garden and Forest:

Sir,—Last June I planted an innocent-looking little tuber of Thladiantha dubia in a bed of choice bulbs, and soon had a large vine, with scabrous heart-shaped leaves and yellow flowers about as pretty, though not as large, as those of a Pumpkin. It wandered all over the bed, hiding and choking finer plants, and had to be confined to the margin by pegging down. As it did not commend itself to me as worth saving, I

did not take it up in the fall, and supposed I had seen the last of it, but this spring it appeared again in twenty different places, persistent of life, hard to exterminate, and destroying better plants. Among choice exotics it is a pest, as it will soon overrun everything else. For a quick-growing screen, trained over a trellis, it may be useful, but there are many things that are prettier for such a position. T. dubia is a perennial of the Gourd family, and its home is north China and India.

In a large collection of Spiræas flowers can generally be found from the first balmy days of April until the sharp frosts of late autumn. In our collection several species and varieties are now in flower. One of these is S. Billardii, which is not a favorite with us because the panicles of bloom, bright pink at first, fade to an ugly brown and give the bush an untidy appearance. It is a Spiræa of rapid growth and large size, and remains in bloom a long time. The fresh flowers are pretty for vases, mixed with the white bloom of S. sorbifolia, which is now waving its graceful plumes in one of the lower shrubberies. S. sorbifolia is another rapid grower, and it spreads inconveniently by many suckers, encroaching on its neighbors and robbing them of light and air. A handsomer variety, S. Lindleyana, does not thrive with us, as our summers are too hot and dry for it. It needs much moisture, and should be grown on the margin of a stream or pond. S. Lindleyana has never bloomed for us, and in times of drought it dwindles and shrivels up, sometimes withering to the root, and yet retaining vitality enough to sprout out again in the following spring. Another Spiræa now in bloom is labeled S. Blumei, and has blossoms that are somewhat similar to those of S. Billardii, though the panicles are not so long nor so stiff and upright in appearance. It lacks also the very long stamens that characterize S. Billardii. The Spiræa Anthony Waterer has begun to flower, and is the most beautiful of the smaller shrubby Spiræas. We have planted at its base a large clump of Plumbago Larpentæ, not yet in bloom. Late last summer, when the two were in flower together, the effect of the rich blue of the one and the deep carmine of the other was exceedingly pretty. S. callosa Fortunei superba is still in beautiful bloom, and it seems to me as fine in its way as the new Anthony Waterer, and is of much stronger growth. The color of the flowers is a rich deep carmine. Sprays of the two varieties are so similar in tint that it is hard to tell them apart. Anthony Waterer, however, has the great merit of blooming until cut down by frosts, while Fortune's Spiræa will soon be out of bloom.

The Purple Fringe is showy now. The fringe is a soft mist of color in which gray, green, yellow and pinkish tints seem to mingle, but I do not see any trace of purple as yet. It is most beautiful when, after a shower, it retains the drops of rain in its intricate meshes, looking like some fine embroidery sprinkled with tiny diamonds.

An interesting shrub now in bloom is Zizyphus vulgaris. This has handsome foliage with small varnished oval leaves and green inconspicuous flowers, which are succeeded by bright red berries. From the berries is made the jujube paste of commerce. Our single specimen of this shrub grows very slowly, and has never matured its fruit. It is in a part of the grounds where it receives a natural protection of Oak-leaves every fall, and it has survived several very cold winters. In Washington it grows to a large size.

A beautiful white Jessamine planted near it is protected in the same manner, and has lived out-of-doors for many years, though it has not reached a large size. It is blooming now and is dainty and delightfully fragrant.

We use Hollyhocks in front of the carriage-house and other outbuildings as well as in the wilder parts of the grounds, and they are now very showy. A rich carmine-colored single Hollyhock combines well with some pure white ones, and makes a fine display. In one place these plants are arranged in a scale of color from white through blush, pink and crimson shades to darkest maroon. The handsomest group of all, however, is one which arranged itself. Seedlings sprang up about an old clump and were allowed to remain as they grew. In this group the colors blend harmoniously, and the effect is at the same time gay and stately.

The Japanese Privet is now in bloom, and its flower clusters are almost as handsome as white lilacs. It flowers more profusely than any other Privet in our shrubberies, and the spreading growth of the shrub and its handsome foliage, which is not quite so dark as that of the Californian variety, make it a desirable shrub. I always find the bees busy about these Privet flowers. Lime or Linden trees are also favorite marts for honeybees. You can tell when the Linden blooms by the ear as well as by the eye. These flowers are pretty for table decoration. They are not very showy, but are cool-looking and fragrant, and a bunch of their drooping sprays on the lunch-table in a pale blue bowl has been much admired.

Shepherdstown, W. Va. *Danske Dandridge.*

The Winter-killing of Plants.

To the Editor of GARDEN AND FOREST:

Sir,—Having noted with interest the accounts in GARDEN AND FOREST of the varying degrees of injury to shrubs and trees in different localities, caused by the severity or peculiarity of the past winter, I note a few incidents which have been observed at Fresh Pond, Cambridge, Massachusetts.

The plants were all young, having been planted on the grounds during the previous spring, mostly in nursery-rows, and were naturally more delicate than established plants. They had all made a healthy and vigorous growth the previous season. The heavy rains in the fall left the ground thoroughly saturated for the winter, and on the low places, where the moisture was in excess, the effect was disastrous to hardy and tender plants alike.

The only plant that suffered total destruction, whether on low or on elevated land, was Ligustrum Ibota, which was killed to the ground. Only a very few plants have made any growth from the bottom, and these but a weak start. Ptelea trifoliata was killed back in varying degrees, and in some cases the entire plant was lost. Lonicera brachypoda, which I had supposed would make growth from the root, was entirely killed back, and only about fifty per cent. have made a start from the root this season. Of Magnolia acuminata about fifty per cent. were killed to the ground.

Liquidambar styraciflua suffered little injury, as did Gymnocladus Canadensis. Of the plants collected and planted out in the fall the main loss was from decay of the root, probably caused by being too wet and heaving in the early winter, thus exposing the roots and freezing them out. Spring planting of such small collected plants seems preferable, or that well-drained land be selected for fall planting.

Mount Auburn, Mass. *M. A. Carpenter.*

The Larch Sack-bearer and a Birch Pest.

To the Editor of GARDEN AND FOREST:

Sir,—The note by Mr. J. D. W. French in a recent issue of GARDEN AND FOREST (page 229) regarding the presence of the Larch sack-bearer, Coleophora laricella, in the vicinity of Boston, may be supplemented by the statement that it has been known for a good many years at the Arnold Arboretum, and its presence here was incidentally referred to in GARDEN AND FOREST, vol. v., page 87.

Some of the foreign Birches in the Arboretum and other localities about Boston have been killed by the attacks of boring larvæ of a beetle belonging to the genus Agrilus, and probably an introduction from Europe. The insect bores into the trunk and limbs, ultimately killing the tree. Its presence is often indicated by slight swellings of the bark. Badly infested trees should be cut down and burned before the beetles emerge in early summer, and an application of dendrolene on the bark would prevent oviposition, although, for a time at least, destroying the beauty of the white trunks.

Arnold Arboretum, Jamaica Plain, Mass. *J. G. Jack.*

Recent Publications.

Greenhouse and Stove Plants. By Thomas Baines. London: John Murray.

This is one of those publications which are always useful in the gardener's library. It begins with a brief treatise on the different groups of plants which are grown in the greenhouse, intermediate house and stove, and the general treatment of Palms, Ferns and Lycopodiums. The great part of the book, however, is taken up with an alphabetical list of the different genera of plants in cultivation under glass, in which the various species are described as to their general character and appearance without going into botanical minutiæ. The comparative beauty and value of each are estimated as near as may be, the uses to which it is best adapted, with a rather full discussion of the best methods of propagating and cultivating. There are numerous full-page illustrations, which have been carefully prepared, and a good index makes the contents of the book readily available. The old methods of attacking the ordinary insects are given, but some of the newer devices which are used

against these pests in American greenhouses are not mentioned. The various fungous diseases to which plants under glass are subjected are hardly alluded to, and the book seems to have been prepared before the modern methods of preventing rust and other contagious diseases were discovered. It is a large octavo of 361 pages.

Notes.

A summer meeting of the Nebraska State Horticultural Society at York, Nebraska, is announced for July 22d and 23d.

During the week ending June 24th there arrived at this port 22,200 boxes of Sicily oranges and 125,750 boxes of Sicily lemons. In the same term of 1895 the receipts were 13,500 boxes of Mediterranean oranges and 64,350 boxes of lemons.

The latest parts of Engler & Prantl's *Die Naturalischen Pflanzenfamilien*, Numbers 131–135, inclusive, which have reached us, are devoted to the Rutaceæ, Simarubaceæ and Burseraceæ, elaborated by Engler; Meliaceæ, by Harms, and a continuation of the Labiatæ, by Brequet.

Professor W. H. Jordan has been elected Director of the New York Experiment Station at Geneva, and will be succeeded in the Maine State College and Experiment Station, at Orono, by Professor Charles D. Woods, now of the Storr's Experiment Station, Middletown, Connecticut.

Probably the largest Cedar of Lebanon in the British Isles is one at Stanford Court, Worcester, which is about two hundred years old, and its branches shade a circle one hundred and sixteen feet in diameter. The trunk is twenty feet nine inches in circumference, and that of the largest branch is more than eleven feet.

A correspondent of the *Country Gentleman* writes that new Strawberry-plants should not be allowed to bear the first season, but that fruit-stems should be picked off as soon as they appear. Too many plants should not be allowed in the same space, as they consume the moisture, and, therefore, all suffer from drought and produce small berries. As a rule, each plant needs from four to six inches square of space to mature good fruit.

It is seldom that universal satisfaction with a new plant can be chronicled, but from every side we hear approval for the new Rose, Crimson Rambler, which is now in flower in many gardens for the first time. The plants, properly grown, are always remarkably vigorous and make thick long shoots. The flowers are produced in large clusters, even on small plants, and are of a pleasing crimson color. It is evidently perfectly hardy in all sections.

The second annual meeting of the Josselyn Botanical Society of Maine will be held in the State Normal School Building in Farmington, Maine, from July 7th to 10th. The society is composed of representative persons interested in Maine botany. The teaching of botany in schools, the study of fungi, mosses and aquatics, and the preparation of flowering plants for the herbarium are among the lecture subjects, and there will be field excursions.

The finest Corn fields in Lebanon valley, in eastern Pennsylvania, says the *Public Ledger*, of Philadelphia, are those on the 600 acres belonging to Isaac S. Long. The planting is done with great care, there being precisely the same number of stalks in each row. Mr. Long provides against delay in growth in cases of replantings in the fields by planting one seed of corn in each of 5,000 flower-pots set out in the open. At replanting time this year a hole was made wherever a stalk was missing and one of the young plants transferred from a pot. The potted stalks have grown well and are as large and thrifty as those first started in the field.

Corlears Hook Park, in this city, was formally opened to the public on Monday evening of last week by the Mayor and Park Commissioners, some 15,000 citizens being present. The park comprises about ten acres in a thickly populated section of the east side and fronts on the East River. The tract has been sodded, planted with trees and shrubs and provided with seats, and conveniently arranged broad walks laid with concrete. A shelter built of Indiana limestone, in Roman style, extends along a part of the western border. The Lookout, as this building is known, is intended to serve as a resting-place for the mothers and children of the district, and cost $37,000. The park, which is on the site occupied by manufactories, stone and lumber yards until two or three years ago, is already a verdurous and refreshing spot. A series of public concerts is arranged for Monday evenings through the summer.

Among the exhibits at the Rose and Strawberry show of the Massachusetts Horticultural Society, in Boston, last week, was the new seedling hardy Rose named M. H. Walsh, which last year received the first gold medal ever awarded to a new Rose by the society. The exhibitor was Hon. Joseph S. Fay, of Wood's Holl, M. H. Walsh, gardener. This Rose, which combines the qualities of vigorous habit, good color and substance, is thought by some to be the best of all the hardy dark red Roses. The petals shade from a deep red at the base to brilliant crimson at the tip, and some of the fully expanded flowers measure six inches across. The stock has been purchased by Peter Henderson & Co., of New York, who will send it out next year.

Arbor Day, which every one knows to be an American institution, has been adopted in Spain by royal command. On March 26th, of this year, the Queen Regent and her Court went with the young King to some grounds lying about two miles to the eastward of Madrid. There the King ceremoniously planted a Pine-sapling, and afterward the same act was performed by each of the two thousand children who had been chosen as his associates from the public schools of the city. All expenses were defrayed by the city, and each child received a medal bearing the inscription, "First Fête of the Tree. Instituted in the Reign of Alfonso XIII., 1896." Similar fêtes are to be held yearly hereafter until the environs of Madrid are well planted. Nor will the children be allowed, as so often happens in this country, to think their work finished with the mere act of planting the trees. They are to be taken periodically by their schoolmasters to inspect their plantations, and will be taught to foster tree-planting wherever and however it may hereafter be in their power so to do.

Twenty-six car-loads of California fruits were sold in this city last week. The season for cherries is nearly ended, but large and showy specimens of Royal Ann, Black Tartarian, Black Republican and Napoleon Bigarreau are still seen. Among varieties of plums now coming from the Pacific coast are Burbank, large greenish yellow, with a flush of pink; Prunus Simoni, large, flattened with deep cavities at base and apex, yellow flesh with aromatic flavor, the fruit large and brick-red in color; Cherry, pale red; Royal Hative, light purple; Clyman, mottled reddish purple, with beautiful blue bloom; Abundance, Koning Claudie, Saint Catherine, and Tragedy prunes. Montgamet apricots are the largest and best specimens of this fruit now in season; other good sorts in market are the English variety Moorpark; Peach, a little earlier than Moorpark, deep orange mottled with brown; and the French variety, Royal. The well-known Alexander, Briggs' Red May, Hale's Early and Governor Garland peaches are coming from California. New figs and Harvest apples are also arriving from the western coast, and Madeline, Sugar and Bartlett pears. With these new crop fruits are offered last year's P. Barry pears, held in cold storage.

The *Journal of Commerce* of this city in a recent editorial on new fibres states that artificial silk is now successfully made from wood pulp. The pulp is boiled in nitric and sulphuric acids, a process suggestive of gun cotton making, and is then squeezed under hydraulic pressure, washed in water, dried, and agitated in alcohol and ether. Its inflammability is also counteracted. After passing through a filtering process it appears like a solution of gum and is forced by pneumatic pressure through pipes that lead to glass tubes, each of which ends in a microscopic aperture. The gummy substance emerges as a filament very much like that spun by the silkworm, and so fine that six or eight or ten are joined for spinning into a thread. This artificial silk is said to take dye better than natural silk and to have a higher lustre; the strength of the threads is only four-fifths that of natural silk. Dress goods and other products of the artificial silk imported from France are sold in London. A factory for its production is now being built near Manchester, and six weaving establishments have contracted for the output. In Europe and America chemists and mechanics have been working to cheapen the preparation of Ramie, and a new process is soon to be tested in a factory in Brooklyn. Besides the remarkable strength of Ramie fibre, its high lustre makes it available as an adulterant, if not a substitute, for silk. It is stronger than hemp and lighter than duck, and if it can be produced cheaply enough it will be available for sails and cordage and for wearing and household fabrics.